



WRF Domain Wizard

A GUI for the WRF Preprocessing System

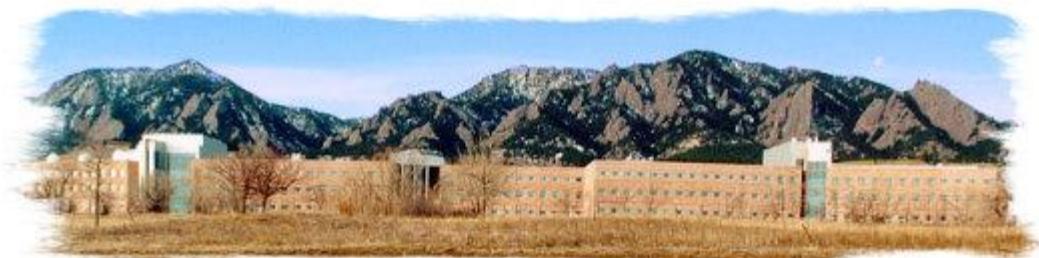
WRF Portal

A GUI for running WRF

Presented by Jeff Smith

Developed by: Mark Govett, Paula McCaslin, Craig Mattocks, Brandon Lynge, Jeff Smith

July 30, 2010



NOAA's Earth System Research Lab in Boulder, CO

What is WRF Domain Wizard?

- The graphical user interface for WPS
- Used to
 - Define the region and projection of a domain on map
 - Define any nests
 - Write information to namelist.wps, namelist.input
 - Run the WPS programs
 - Visualize the netCDF output files
- Version 2.00 released on July 29, 2010
 - WRF Portal 2.00 will be released next week

WRF Domain Wizard Technical Info -1

■ Software is written in Java

- Minimum (Java) JRE 1.5
- JRE 1.6 recommended for best performance
- Runs on local computer or remote computer
- Uses SFTP/SSH-2 to connect to remote computers
- Can be run “locally” on a remote computer with X display forwarding
- Can be run from web page as a Java Web Start app or download .zip file and run from the command line
- 390 MB of RAM, 1024 x 768 (or better) video display

■ Does not include WPS (must download/compile that separately)

WRF Domain Wizard Technical Info -2

■ WDW supports

- WPS/WRF 2.x, latest version of WRF/WPS 3.2
- ARW, NMM
- HWRF (Hurricane WRF, reads tcvitals file)
- GLAPS domains (writes nest7grid.parms files)
- Nests
- Projections
 - Lambert Conformal
 - Polar Stereographic
 - Mercator
 - Lat-Lon Regional (WPS 3.x)
 - Lat-Lon Global (WPS 3.x)
 - Rotated Lat-Lon for NMM

<http://www.wrfportal.org/DomainWizard.html>

WRF Domain Wizard - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://wrfportal.org/DomainWizard.html

WRF Domain Wizard

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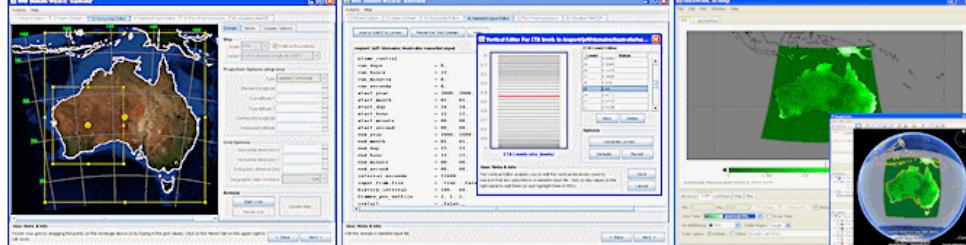
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WRF Domain Wizard
GUI for the WRF Preprocessor System (WPS) and namelist.input
Version 2.00 for Linux, AIX, Mac, and Windows - released July 29, 2010

WRF Domain Wizard is the successor to the [WRFSI GUI](#) and is a graphical user interface (GUI) for the new [WRF Preprocessing System \(WPS\)](#). It enables users to easily define and localize domains (cases) by selecting a region of the Earth and choosing a map projection. Users can also define nests using the nests editor, edit namelist.input, run the WPS programs (geogrid, ungrid, and metgrid) through the GUI, and visualize the NetCDF output. WRF Domain Wizard is also a built-in component of [WRF Portal](#). WRF Domain Wizard stores its information in the standard WPS file, namelist.wps.

WRF Domain Wizard can be run as a stand-alone application or it can be run from inside the [WRF Portal](#) application. There are two ways to launch the standalone version of WRF Domain Wizard: by downloading the application and unzipping it, or by launching it with Java Web Start. The advantages of running the Java Web Start version include being able to run it without doing an installation, and automatically receiving program updates. Having trouble running Domain Wizard? Please read the [FAQ](#) or [troubleshooting tips](#).

Source Code is available [here](#). Looking for the special version for LEAD? Go [here](#).
What's [new in version 2.00](#)

Run WRF Domain Wizard using Java Web Start

Click here to launch WRF Domain Wizard version 2.00

WRF Domain Wizard – How to Run

■ Run using Java Web Start (JWS)

- JWS automatically downloads your software then runs it. No need to set up directories, run installation programs, or configure anything. Just click the link and the program runs.
 - The first time you click on the link, there is a delay while the software downloads
 - When you click the link in the future, if the software has been updated, you automatically received the updated portion
- Java and Java Web Start (javaws) come standard with Linux and Mac. If you don't have Java on your system, download a Java Runtime Edition (JRE) from Sun

WRF Domain Wizard – How to Run

WRF Domain Wizard - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://wrfportal.org/DomainWizard.html

WRF Domain Wizard

WRF Portal

Domain Wizard

FIM Portal

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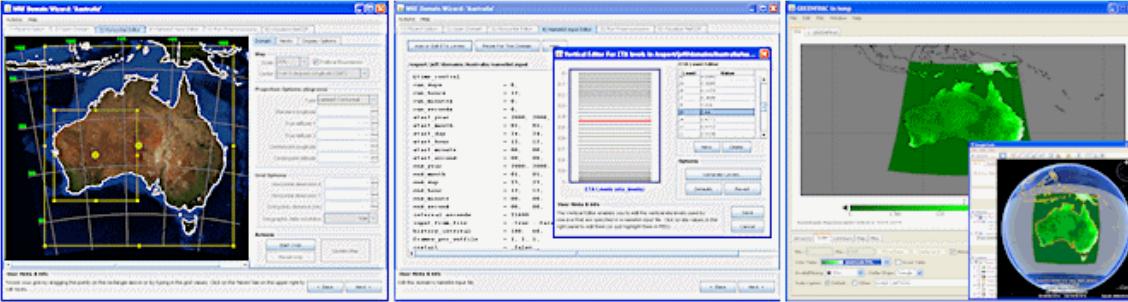
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Run WRF Domain Wizard using Java Web Start

[Click here to launch WRF Domain Wizard version 2.00](#) ← **Click Here**

Requires Java 5 or later (go [here](#) if you can only run Java 1.4).

WRF Domain Wizard – How to Run

■ Run using Java Web Start



WRF Domain Wizard – How to Run

- Run using Java Web Start



WRF Domain Wizard – How to Run

- Run using Java Web Start



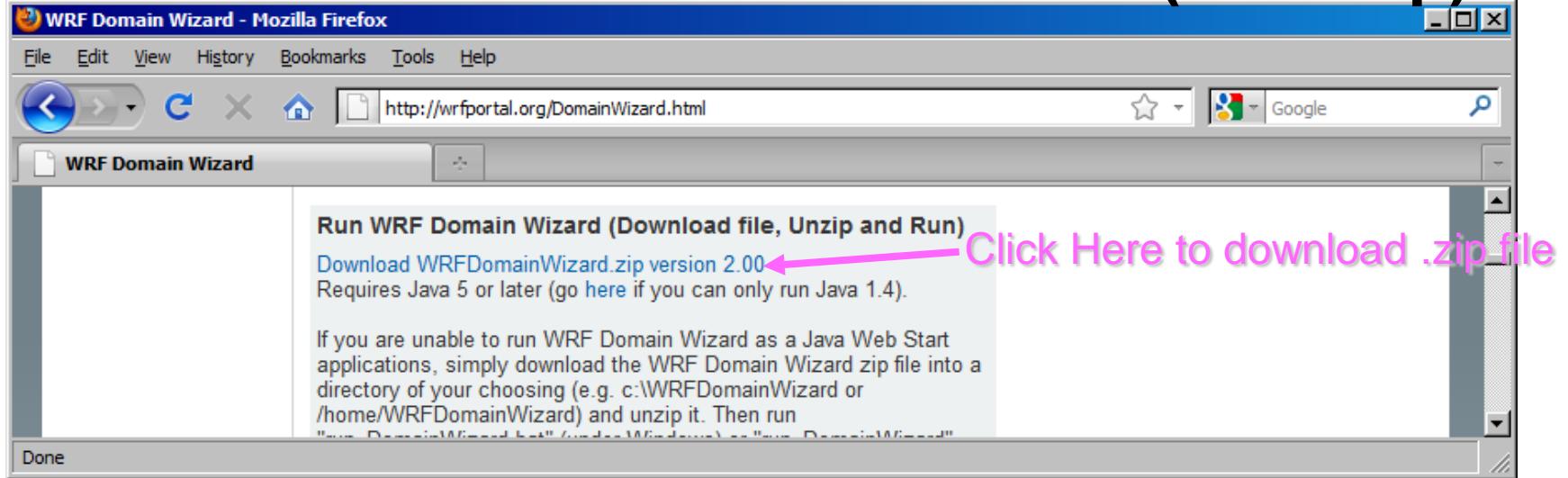
WRF Domain Wizard – How to Run

- Run using Java Web Start



Trust us, we're the United States Government.

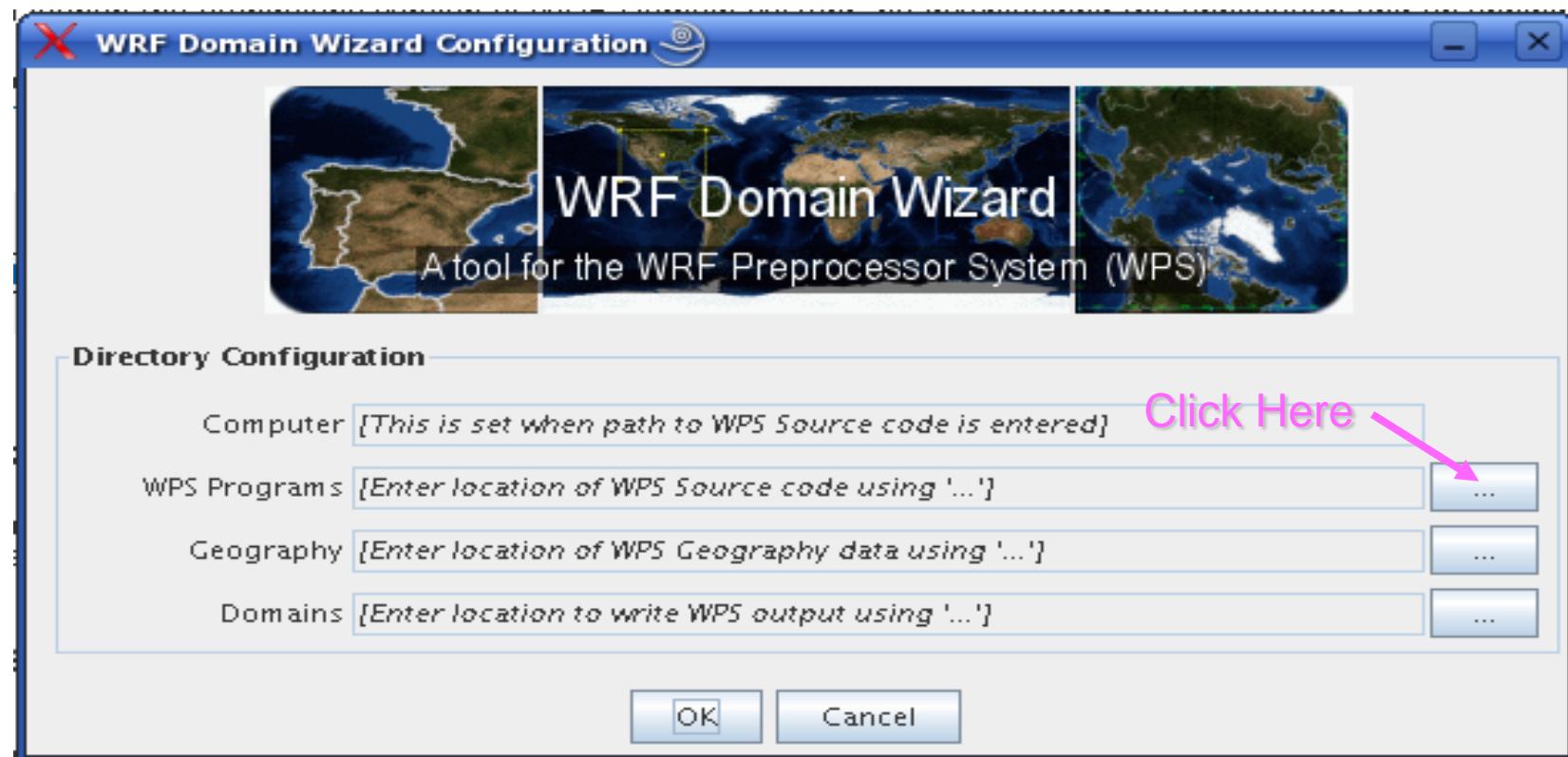
WRF Domain Wizard – How to Run (from Zip)



- Download zip file from web link and run
 - Download the **WRFDomainWizard.zip** to e.g. c:\WRFDomainWizard or /home/WRFDomainWizard
 - unzip **WRFDomainWizard.zip**
 - Run "run_DomainWizard.bat" (Windows) or "run_DomainWizard" (Linux)
java -Xmx384m -jar DomainWizard.jar
 - You can place a shortcut icon on your desktop

WRF Domain Wizard Configuration Window

- This window pops up when you start WDW



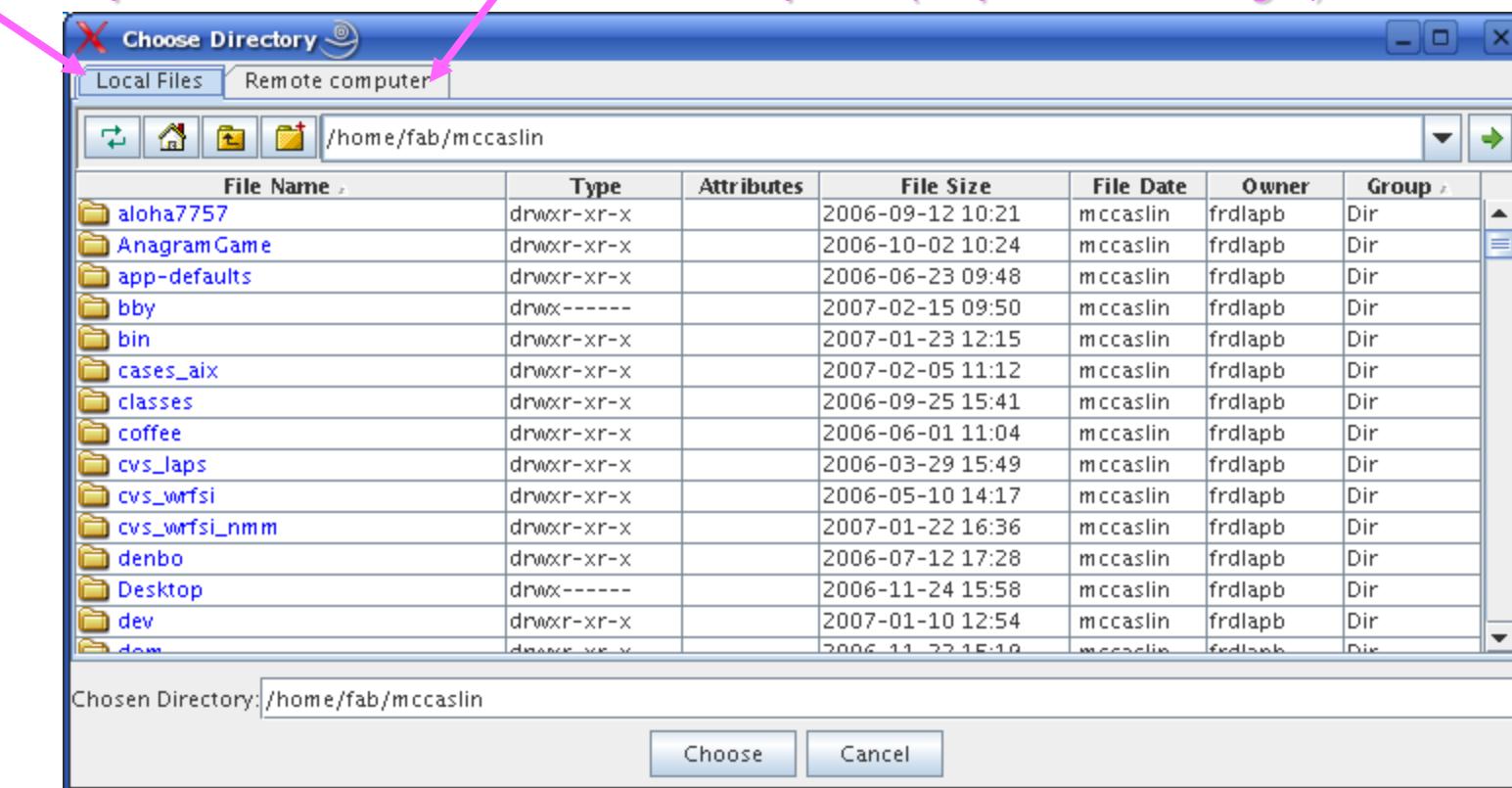
WRF Domain Wizard – How to Run

■ Configuration Directory Chooser

- Choose the computer and dir that WPS is installed on

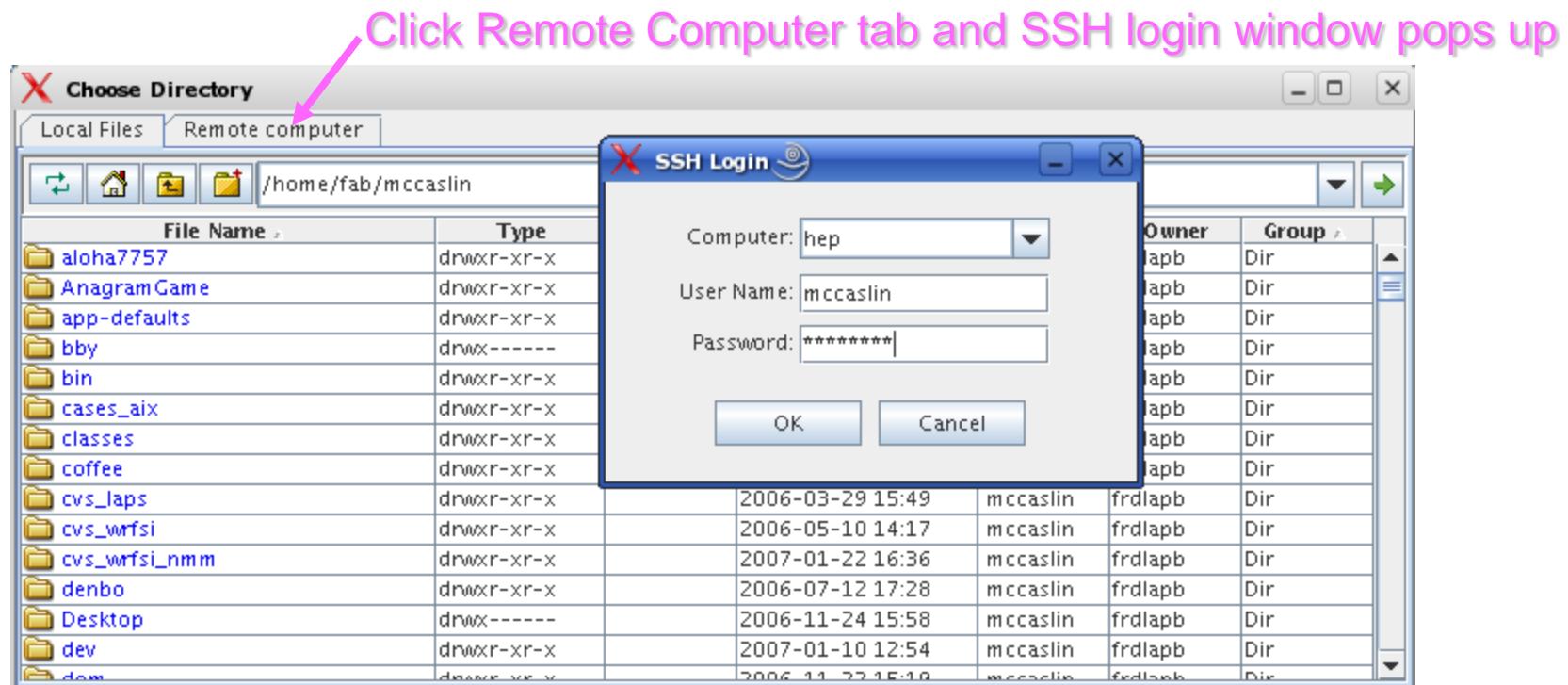
Local Computer

Remote Computer (requires SSH login)



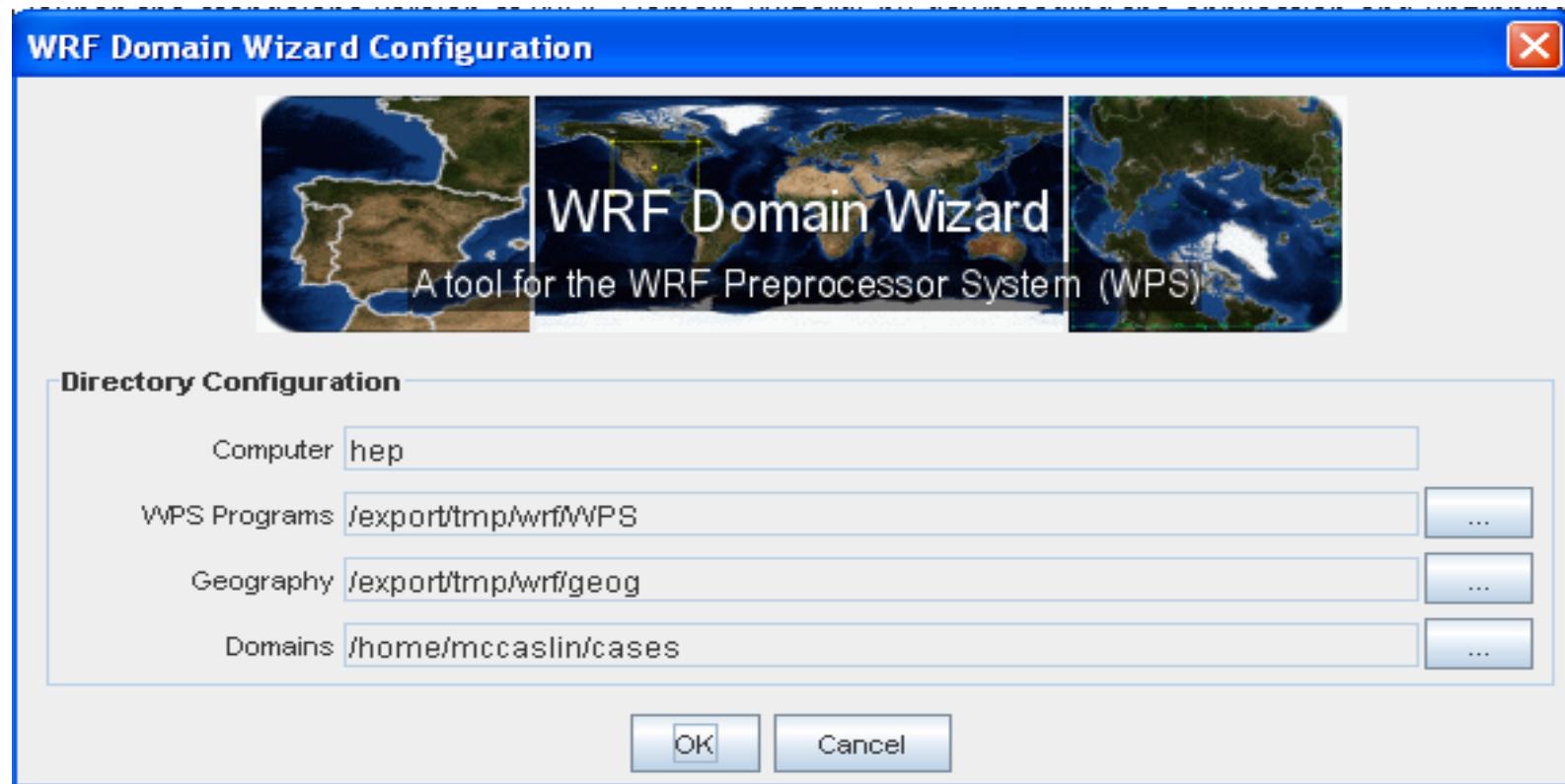
WRF Domain Wizard – How to Run

■ Configuration selecting remote system



WRF Domain Wizard – How to Run

■ Configuration complete



WRF Domain Wizard – How to Run

- WDW writes configuration info to DomainWizard.cfg

- Located in your home directory

- Sample file:

- hep.fsl.noaa.gov

- /export/tmp/wrf/WPS

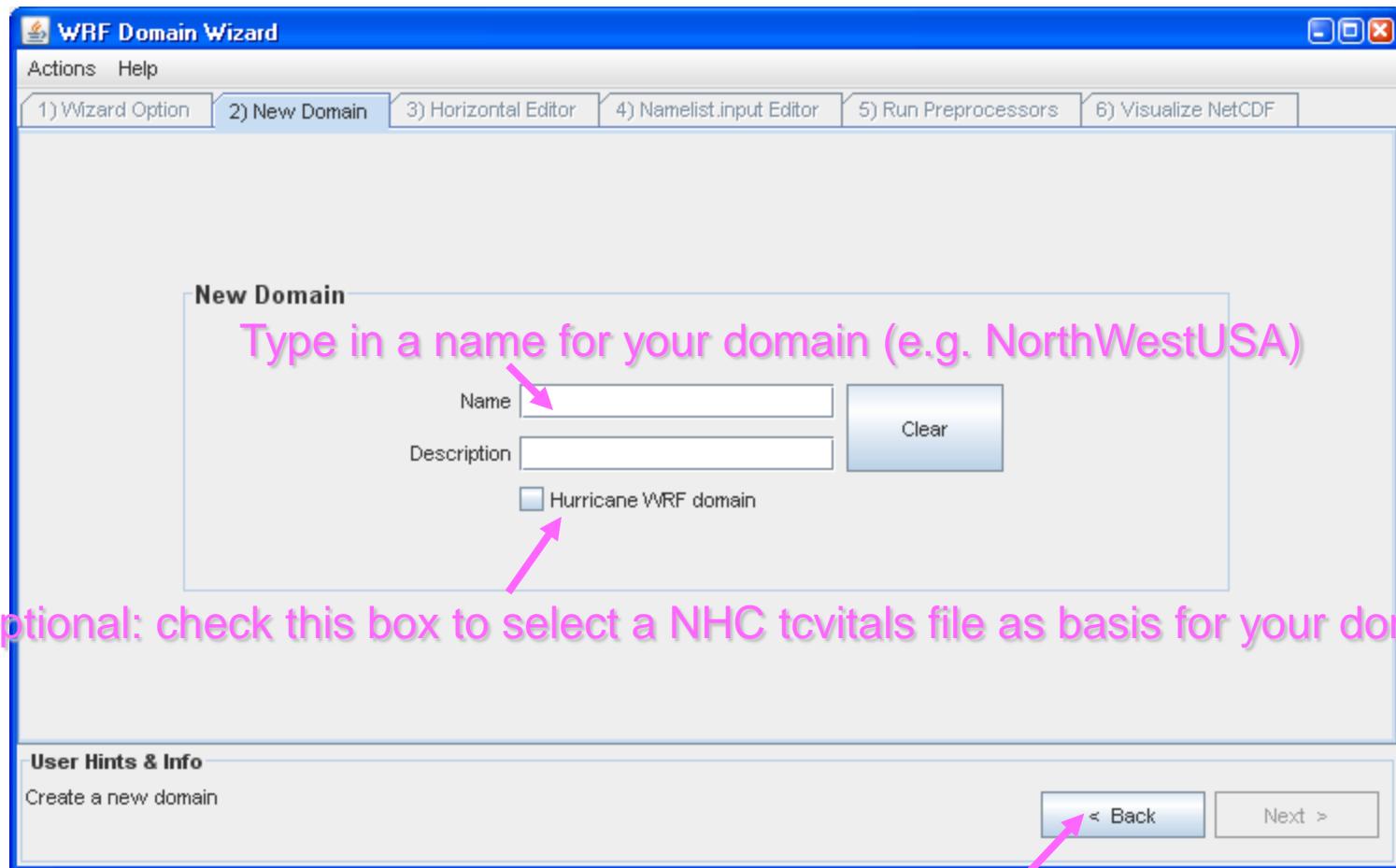
- /export/tmp/wrf/geog

- /export/jeff/domains

- /data/public/data/grib/ftp/7/0/84/211

(last line indicates the last grib files dir you selected)

WRF Domain Wizard Tutorial -1



Back button takes you to previous screen

WRF Domain Wizard Tutorial -2

WRF Domain Wizard: 'test'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Open A Domain

- Alaska-NMM
- Australia-NMM
- Colo
- Colorado
- Florida-Lambert
- Florida-NMM
- Florida-WPS2-NMM
- Greenland
- NMM-Bug
- South-America-NMM
- UK
- global
- hmm3
- rrr
- test
- test1

Preview

Delete Refresh

User Hint & Info (88.22 N, 79.57 W)

Open or delete a domain

Next button takes you to next screen

< Back Next >

WRF Domain Wizard Tutorial -3

Tutorial - WRF Domain Wizard (Visualization) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.wrfportal.org/tutorial-flash/tutorial-DW-LatLonGlobal.html

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WRF Domain Wizard: 'Lat-Lon-Global-USA'

Actions Help

1) Wizard Option 2) New Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Domain Nests Display Options

Note the new WPS 3 projections in this list: "Lat-Lon Region" and "Lat-Lon Global". These options are only available if the WPS directory that I selected in the initial configuration window points to a WPS 3 installation.

For this tutorial, I'll select "Lat-Lon Global"

Continue

Projections (degrees)

Type: Lambert Conformal
Centerpoint longitude: 0 degrees longitude (GMT)
Centerpoint latitude: 37.383
True latitude:
Centerpoint longitude:
Centerpoint latitude:

Grid Options

Horizontal dimension X: 0
Horizontal dimension Y: 0
Grid points distance (km): 0
Geographic data resolution: 10m

Actions

Start Over Reset Grid Update Map

User Hint & Info (53.2 N, 45.26 W)

Draw a rectangle around your domain, choose a projection, then click the Update Map button

< Back Next >

Done



WRF Domain Wizard Tutorial -4

Tutorial - WRF Domain Wizard (Open Domain , Add Nests) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.wrfportal.org/tutorial-flash/tutorial-DW-OpenDomainAddNests.html

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WRF Domain Wizard: 'Australia'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Domain Nests Display Options

Nested Domain Properties

ID	PID	Ratio	Left	Right	Top	Bot	NX	NY	Res
1	1	1	1	101	86	1	100	85	10m
2	1	3	61	96	38	6	106	97	5m
3	1	3	6	37	61	29	94	97	5m

When you click on a nest data row here, the nest box becomes highlighted.

This nest (2) will highlight when we click on nest data row (2).

New: scroll bar to the right to see more nest information (e.g. dx-deg and CenLat)

User Hint & Info

Select a nest by clicking on its number, or by clicking on a row in the table on the right. You can't edit/resize a nest if it has a child nest (you must delete the child first).

Domain Nests Display Options

Nested Domain Properties

Pts	dx-deg	dy-deg	CenLat	CenLon
11300	0.085398	0.085109	44.49344	-117.784
19800	0.02847	0.02837	41.3382	-114.85096

New Edit Delete Clear

Done

WRF Domain Wizard Tutorial -5

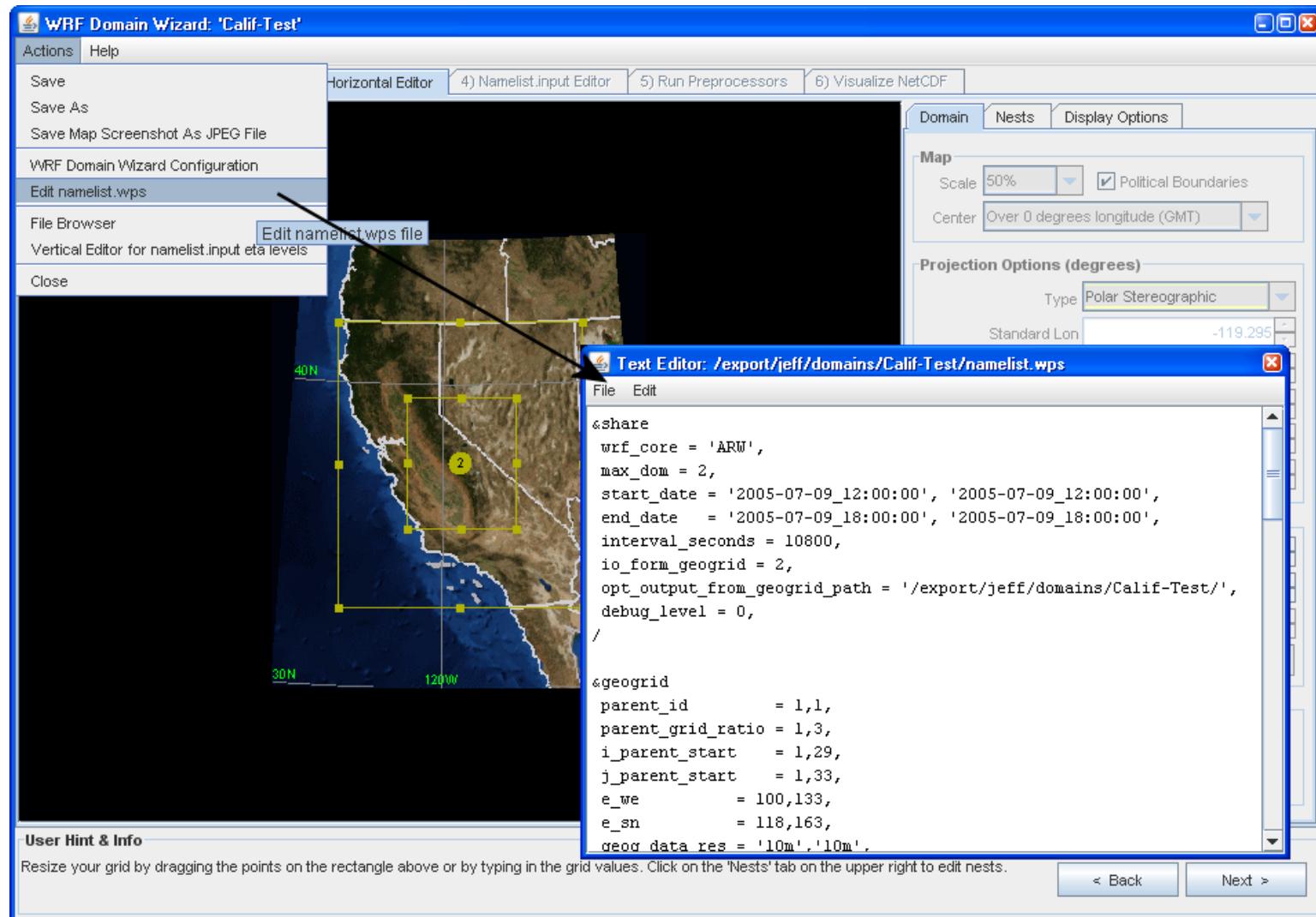
namelist.wps file

```
interval_seconds = 10800,  
io_form_geogrid = 2,  
opt_output_from_geogrid_path = '/wrf-data/domains/UK',  
debug_level = 0,  
/  
  
&geogrid  
parent_id      = 1,1,1,  
parent_grid_ratio = 1,3,3,  
i_parent_start  = 1,41,30,  
j_parent_start  = 1,15,76,  
e_we          = 100,136,106,  
e_sn          = 119,130,85,  
geog_data_res = '10m','10m','10m',  
dx = 11400,  
dy = 11400,  
map_proj = 'mercator',  
ref_lat = 54.804,  
ref_lon = -4.195,  
truelat1 = 54.804,  
truelat2 = 0,  
stand_lon = -4.195,  
geog_data_path = '/wrf-data/geog10m',  
opt_geogrid_tbl_path = '/wrf-data/domains/UK',  
ref_x = 50.0,  
ref_y = 59.5,  
/
```



WRF Domain Wizard Tutorial -6

You can edit namelist.wps file in built-in text editor



WRF Domain Wizard Tutorial -7

WRF Domain Wizard: 'Colo'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Add or Edit ETA Levels Reset For This Domain Validate Help /wrf-data/domains/Colo/namelist.input

GUI Editor **Text Editor** Can edit plain text, if you prefer

Number of Domains (max_dom): 2

Parameter	Master Domain	Nest 1
j_parent_start	1	22
parent_grid_ratio	1	3
parent_time_step_ratio	1	3
feedback	1	
smooth_option	0	
&physics		
mp_physics	2	0
ra_lw_physics	1	0
ra_sw_physics	1	0
radt	10	1
sf_sfclay_physics	1	3
sf_surface_physics	2	99

Legitimate options for parameter

ra_lw_physics (max_dom)

Explanation of parameter

0 longwave radiation option
1 no longwave radiation
2 RRTM scheme: Rapid Radiative Transfer Model. An accurate scheme using look-up tables for efficiency. Accounts for multiple bands, trace gases, and microphysics species. This scheme has been preliminarily tested for WRF-NMM.
3 CAM scheme

User Hints & Info

Edit this domain's namelist.input file. The following parameters have been defaulted for this domain: max_dom, s_we, e_we, s_sn, e_sn, dx, dy, i_parent_start, j_parent_start, time_step. Right click in the window to Copy, Paste, or Find.

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WRF Domain Wizard Tutorial -8

namelist.input file

```
&dynamics
w_damping           = 0,
                    = 1,
                    = 4,
base_temp           = 290.,
damp_opt            = 0,
zdamp               = 5000., 5000., 5000.,
dampcoef            = 0.01, 0.01, 0.01,
khdif               = 0, 0, 0,
kvdfid              = 0, 0, 0,
smdiv               = 0.1, 0.1, 0.1,
emdiv               = 0.01, 0.01, 0.01,
epssm               = 0.1, 0.1, 0.1,
time_step_sound     = 4, 4, 4,
h_mom_adv_order    = 5, 5, 5,
v_mom_adv_order    = 3, 3, 3,
h_sca_adv_order    = 5, 5, 5,
v_sca_adv_order    = 3, 3, 3,
non_hydrostatic     = .true., .true., .true.,
pd_moist             = .true., .true., .true.,
pd_scalar            = .true., .true., .true.,
pd_chem              = .true., .true., .true.,
pd_tke               = .true., .true., .true.,
```

WRF Domain Wizard: UK

Actions Help

(1) Wizard Option (2) New Domain (3) Horizontal Editor (4) Namelist Input Editor (5) Run Preprocessors (6) Visualize NetCDF

Add or Edit ETA Levels Reset For This Domain Help /wrf-data/domains/UK/namelist.input

GUI Editor Text Editor

Number of Domains (max_dom): 3

Parameter	Master Domain	Nest 1	Nest 2
time_step_sound	4	4	4
h_mom_adv_order	5	5	5
v_mom_adv_order	3	3	3
h_sca_adv_order	5	5	5
v_sca_adv_order	3	3	3
non_hydrostatic	true	true	true
pd_moist	true	true	true
pd_scalar	true	true	true
pd_chem	true	true	true
pd_tke	true	true	true
&body_control			
non_hydrostatic (max_dom)	true	whether running the model in hydrostatic or non-hydro mode	
pert_coriolis (max_dom)	false	Coriolis only acts on wind perturbation (idealized)	
mix_full_fields	false	For diff_opt=2 only, vertical diffusion acts on full fields (not just on perturbation from 1D base_profile) (idealized)	
h_mom_adv_order (max_dom)	5	horizontal momentum advection order (5=5th, etc.)	
** domain width (overlaps between domains)	3	optional parameter for overlapping regions	

User Hint & Info

Edit this domain's namelist.input file. The following parameters have been defaulted for this domain: max_dom, s_we, e_we, s_sn, e_sn, dir, dy, i_parent_start, j_parent_start, time_step. Right click in the window to Copy, Paste, or Find.

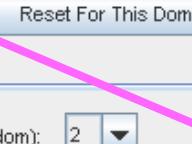
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WRF Domain Wizard Tutorial -9

WRF Domain Wizard: 'Colo'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Add or Edit ETA Levels  Reset For This Domain Validate Help /wrf-data/domains/Colo/namelist.input

GUI Editor  Text Editor

Number of Domains (max_dom): 2

GUI editor for ETA levels

Parameter	Master Domain	Nest 1
j_parent_start	1	22
parent_grid_ratio	1	3
parent_time_step_ratio	1	3
feedback	1	
smooth_option	0	
&physics		
mp_physics	2	0
ra_lw_physics	1	0
ra_sw_physics	1	0
radt	10	1
sf_sfclay_physics	1	3
sf_surface_physics	2	99

ra_lw_physics (max_dom)

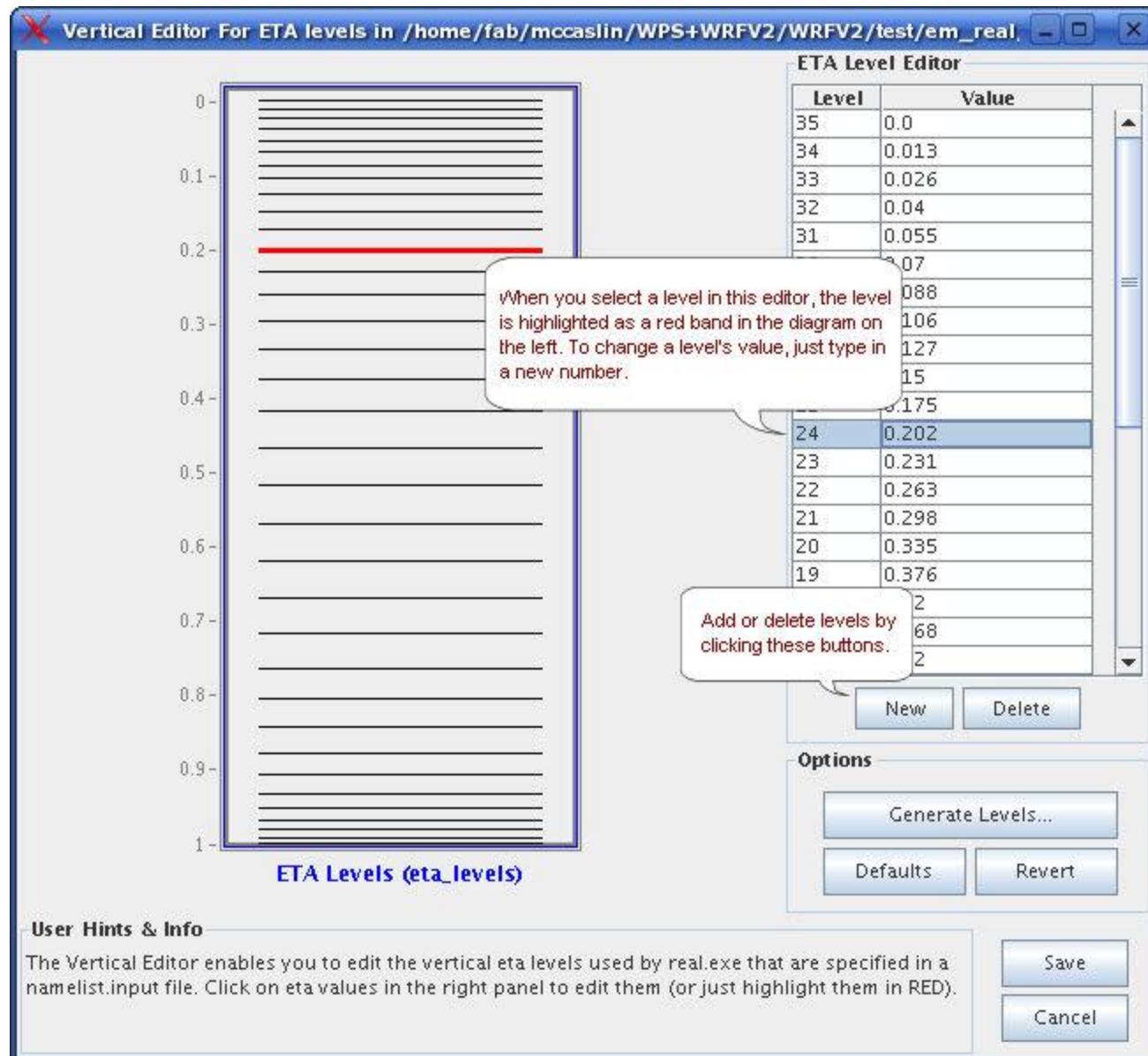
0	longwave radiation option
1	no longwave radiation
2	RRTM scheme: Rapid Radiative Transfer Model. An accurate scheme using look-up tables for efficiency. Accounts for multiple bands, trace gases, and microphysics species. This scheme has been preliminarily tested for WRF-NMM.
3	CAM scheme

User Hints & Info

Edit this domain's namelist.input file. The following parameters have been defaulted for this domain: max_dom, s_we, e_we, s_sn, e_sn, dx, dy, i_parent_start, j_parent_start, time_step. Right click in the window to Copy, Paste, or Find.

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WRF Domain Wizard Tutorial -10

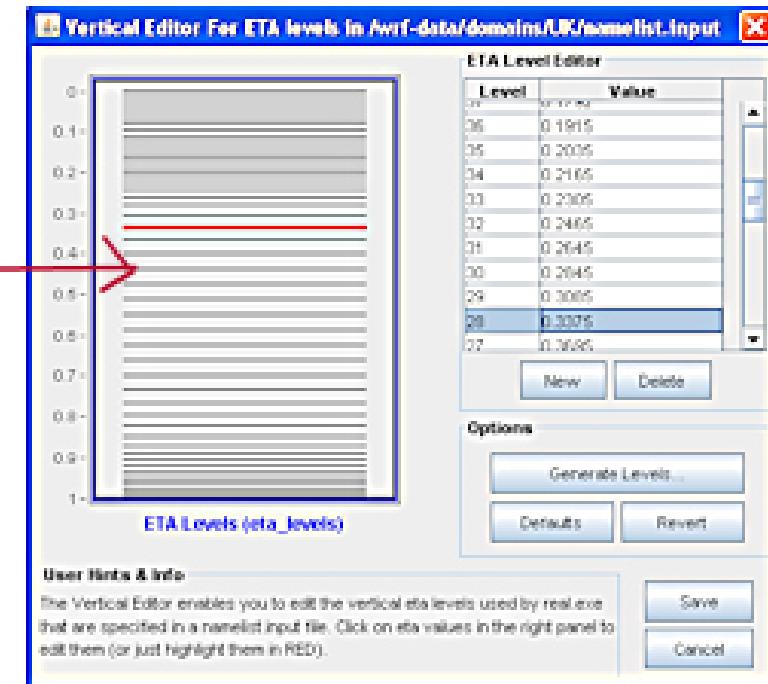


WRF Domain Wizard Tutorial -11

GUI editor for ETA levels

namelist.wps file

```
&domains
eta_levels = 1.000, 0.994, 0.987, 0.979, 0.97,
             0.96, 0.949, 0.937, 0.924, 0.909,
             0.892, 0.873, 0.851, 0.826, 0.798,
             0.768, 0.736, 0.702, 0.666, 0.629,
             0.5915, 0.5536, 0.5153, 0.4773, 0.44,
             0.404, 0.3695, 0.3375, 0.3085, 0.2845,
             0.2645, 0.2465, 0.2305, 0.2165, 0.2035,
             0.1915, 0.1792, 0.1667, 0.1539, 0.1407,
             0.1272, 0.1134, 0.0995, 0.0855, 0.0713,
             0.0571, 0.0429, 0.0287, 0.0145, 0.000,
time_step      = 60,
time_step_fract_num   = 0,
time_step_fract_den   = 1,
max_dom        = 3,
s_we           = 1,    1,    1,
e_we           = 100,  136,  106,
```



WRF Domain Wizard Tutorial -12

WRF Domain Wizard: 'Calif-Test'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Configure Preprocessor Variables for Ungrib and Metgrid

Grib Vtable Name: Vtable.NAM

Grib Files Dir: _model_data/INPUT_DATA/NAM

Grib Files: 0519012000000
0519012000003
0519012000006

Select Dir
Select Files
Julian Calc

Grib Start Date: 2005-07-09 ... hh:mm:ss: 12:00:00

Grib End Date: 2005-07-09 ... hh:mm:ss: 18:00:00

Grib Interval (hr): 3

Run Preprocessors to Generate Input Data Fields Required for WRF

Step	Run	List	View
1	Running	Output	Log
2	ungrib	Output	Log
3	metgrid	Output	Log

Job Command
Kill geogrid.exe
Del Temp Files

Progress Status running System Commands

```
2010-01-29 16:40:31.739 --- INFORM: For SLOPECAT, couldn't find interpolator sequence for resolution 1Um.  
2010-01-29 16:40:31.739 --- INFORM: Using default interpolator sequence for SLOPECAT.  
2010-01-29 16:40:31.739 --- INFORM: For SLOPECAT, couldn't find 10m data source.  
2010-01-29 16:40:31.739 --- INFORM: Using default data source for SLOPECAT.  
2010-01-29 16:40:31.842 --- Processing field 1 of 14 (LANDUSEF)  
2010-01-29 16:40:32.117 --- Processing field 2 of 14 (LU_INDEX)  
2010-01-29 16:40:32.121 --- Processing field 3 of 14 (HGT_M)  
2010-01-29 16:40:32.144 --- Processing field 4 of 14 (SLPX)  
2010-01-29 16:40:32.145 --- Processing field 5 of 14 (SLPY)  
2010-01-29 16:40:32.146 --- Processing field 6 of 14 (HGT_U)  
2010-01-29 16:40:32.169 --- Processing field 7 of 14 (HGT_V)  
2010-01-29 16:40:32.191 --- Processing field 8 of 14 (SOILTEMP)  
2010-01-29 16:40:32.220 --- Processing field 9 of 14 (SOILCTOP)
```

Running geogrid.exe

geogrid.exe 60% Clear

User Hints & Info

Read /export/jeff/domains/Calif-Test/geogrid.log...

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WRF Domain Wizard Tutorial -13

WRF Domain Wizard: 'Calif-Test'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Configure Preprocessor Variables for Ungrib and Metgrid

Grib Vtable Name: Vtable.NAM
Grib Files Dir: _model_data/INPUT_DATA/NAM
Grib Files: 0519012000000
0519012000003
0519012000006
Select Dir
Select Files
Julian Calc

Grib Start Date: 2005-07-09 ... hh:mm:ss: 12:00:00
Grib End Date: 2005-07-09 ... hh:mm:ss: 18:00:00
Grib Interval (hr): 3

Run Preprocessors to Generate Input Data Fields Required for WRF

Step	Run	List	View
1	geogrid	Output	Log
2	ungrib	Output	Log

Julian Day Calculator Tool

Grib files
Grib file name
day 010
This tool

Grib Files

0519012000000
0519012000003
0519012000006

Convert Date to Julian Day

Year: 2010
Month: 1
Day: 29
Convert Date To Julian Day

Convert Julian Day to Date

Year: 2005
Julian Day: 190
Convert Julian Day to Date
Jul 09 2005

Progress Status running System Commands

```
!!!!!!  
! Successful completion of ungrb. !  
!!!!!!
```

----- List of Output -----

List of ungrb.exe files found

FILE:2005-07-09_12
FILE:2005-07-09_15
FILE:2005-07-09_18

ungrb.exe 1

User Hints & Info

Success running of /export/tmp/WRF3/WPS301/ungrib/src/ungrb.exe

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The Julian Day Calculator Tool window contains the following data:

Convert Date to Julian Day
Year: 2010 Month: 1 Day: 29 Convert Date To Julian Day
Julian Day: 190 Convert Julian Day to Date Jul 09 2005
Convert Julian Day to Date
Year: 2005 Julian Day: 190 Convert Julian Day to Date Jul 09 2005

WRF Domain Wizard Tutorial -14

WRF Domain Wizard: 'Calif-Test'

Actions Help

1) Wizard Option 2) Open Domain 3) Horizontal Editor 4) Namelist.input Editor 5) Run Preprocessors 6) Visualize NetCDF

Important: after clicking 'View in Panoply' button, you must 'Quit' the map window before visualizing another netCDF file.

Datasets Browser

File Edit Plot Window Help

Create Plot Target

Remove Remove All Hide CDL

Datasets & Variables

Name	Long Name	Type
temp.nc	temp.nc	Local File
ALBEDO12M	ALBEDO12M	[lon][lat]
CLAT	CLAT	[lon][lat]
CLONG	CLONG	[lon][lat]
COSALPHA	COSALPHA	[lon][lat]
E	E	[lon][lat]
F	F	[lon][lat]
GREENFRAC	GREENFRAC	[lon][lat]
HGT_M	HGT_M	[lon][lat]
HGT_U	HGT_U	[lon][lat]

Dataset/Variable CDL Info

Variable "GREENFRAC"

```
float GREENFRAC
:FieldID
:Memory
:units
:descri
:stagger
```

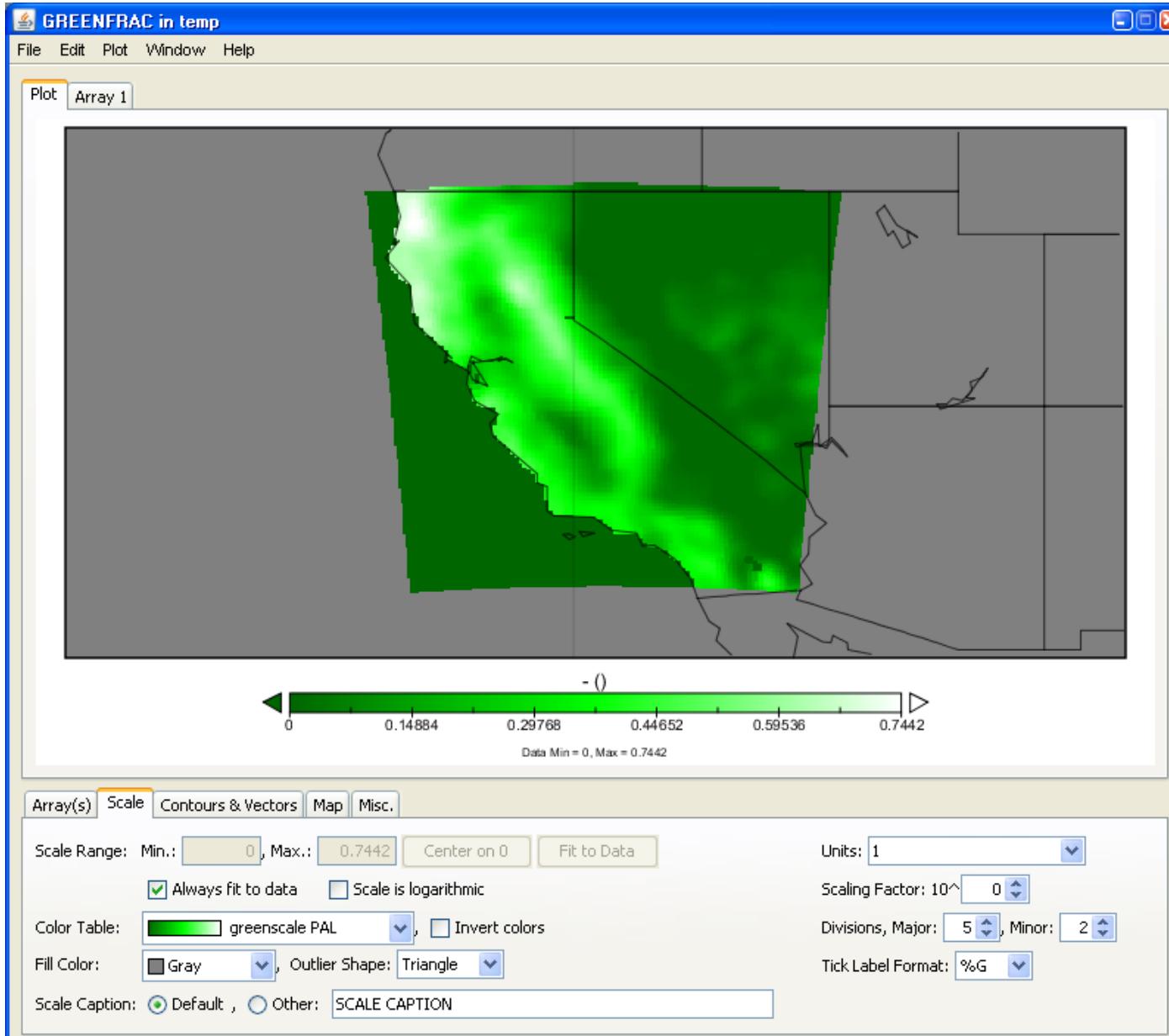
Download File View in Panoply (and Google Earth)

User Hints & Info

Choose a netCDF file and click 'View in Panoply' button. When the Datasets Browser window pops up, simply double-click on a field of interest (e.g. GREENFRAC) to view your map. Then, select File menu, 'Export to KMZ' to export to a Google Earth .kmz file.

< Back Exit

WRF Domain Wizard Tutorial -15



Panoply is a slick tool/library for viewing NetCDF, HDF, Grib1, Grib2 files.

It has many display options, including selecting color tables like this greenscale.



WRF Domain Wizard

A GUI for the WRF Preprocessing System

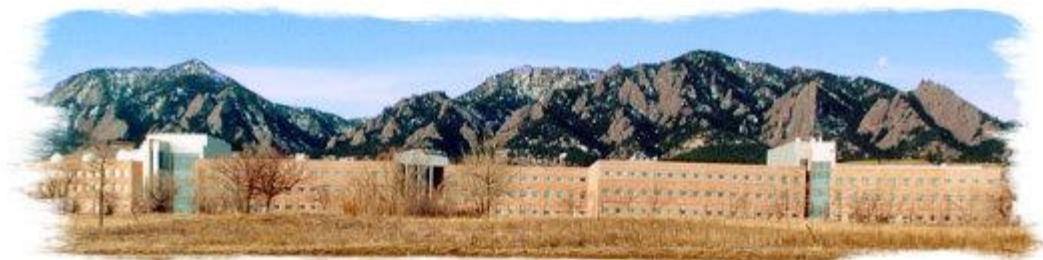
WRF Portal

A GUI for running WRF

Presented by Jeff Smith

Developed by: Mark Govett, Paula McCaslin, Craig Mattocks, Jeff Smith

July 30, 2010



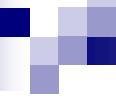
NOAA's Earth System Research Lab in Boulder, CO

What is WRF Portal? -1

- A graphical user interface for running WRF
 - Also being used to run FIM (as FIM Portal)
- This application runs on all platforms and can be launched from a standard web browser as a Java Web Start program
- It simplifies and automates:
 - configuring and running of model workflows
 - launching and monitoring runs
 - Halting or canceling runs/jobs
 - visualization of your model's output
 - Includes WDW (you can just download WRF Portal and you'll also have the domain wizard)
- Version 2.0 will be released the first week of August

What is WRF Portal? -1

- Does not include WRF (you must download and compile that separately)
- Includes an internal workflow manager that works “out of the box” and supports SGE, LSF, and PBS
- Optional external workflow manager (written by Chris Harrop at ESRL) must be installed separately and is more powerful and robust. It supports SGE and LSF
- More info here: <http://www.wrfportal.org>



Why Use WRF Portal?

- Saves user's time by automating tedious and repetitive tasks and providing time saving features
- Portal Wizard that walks the user through the steps of configuring computers, user preferences, and tasks

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- Graphical file browsers to quickly locate files
- Robust job managers for running and managing tasks
- Progress monitor for tracking the progress of runs

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- Robust job managers for running and managing tasks
- Progress monitor for tracking the progress of runs
- Graphical netcdf/grib viewers to visualize model input/output
- Stores its information in a database so you can easily search and retrieve your information without the tedium of hunting through a myriad of files in directories

- **Portal Wizard** walks you through the process of configuring your computers and the tasks in your workflows

 WRF Portal [Database=C:\Documents and Settings\Jeff\portal-files\portal] [User=portal]

File Tools Window Help

Portal Wizard

1) Computer(s) 2) User Information 3) WRF Domain Wizard 4) Task Manager 5) Define Workflow 6) Run Workflow

About Setting Up Computers And Workflow Managers

Enter one or more LINUX, UNIX, or Mac computers on which you'll run portal tasks. Enter your computer's network name (e.g. wopr.norad.mil) to use your local computer.

To use the External Workflow Manager to execute your model tasks (jobs), you must install it separately from wrfportal.org, and then enter the path to this program here. The External Workflow Manager requires that you select a batch queue system (job scheduler)--either SGE, PBS or LSF

Computer	Aliases	External Workflow Mgr Path	Ruby Path	Batch/Queue
tornado.fsl.noaa.gov		/workflowmgr101/workflowmgr.rb	/usr/bin/ruby	NONE ▾
hep.fsl.noaa.gov			/usr/bin/ruby	NONE SGE PBS LSF

New Delete Help Save

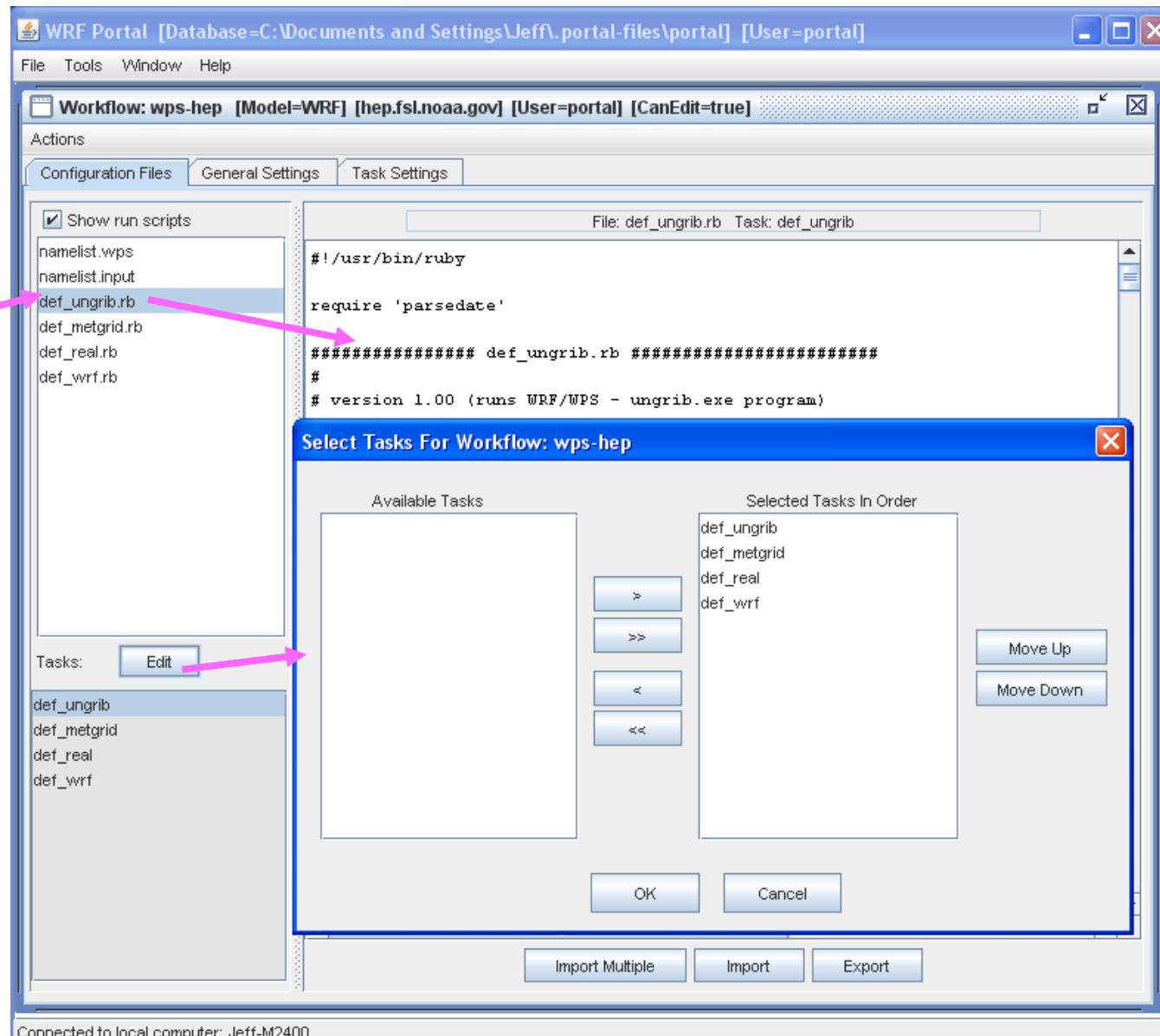
User Hints & Info

You must configure at least one computer that will be used to run your models. Instead of deleting the first computer in the list, just rename it to the network name of the computer you will use (e.g. elmo.esrl.noaa.gov)

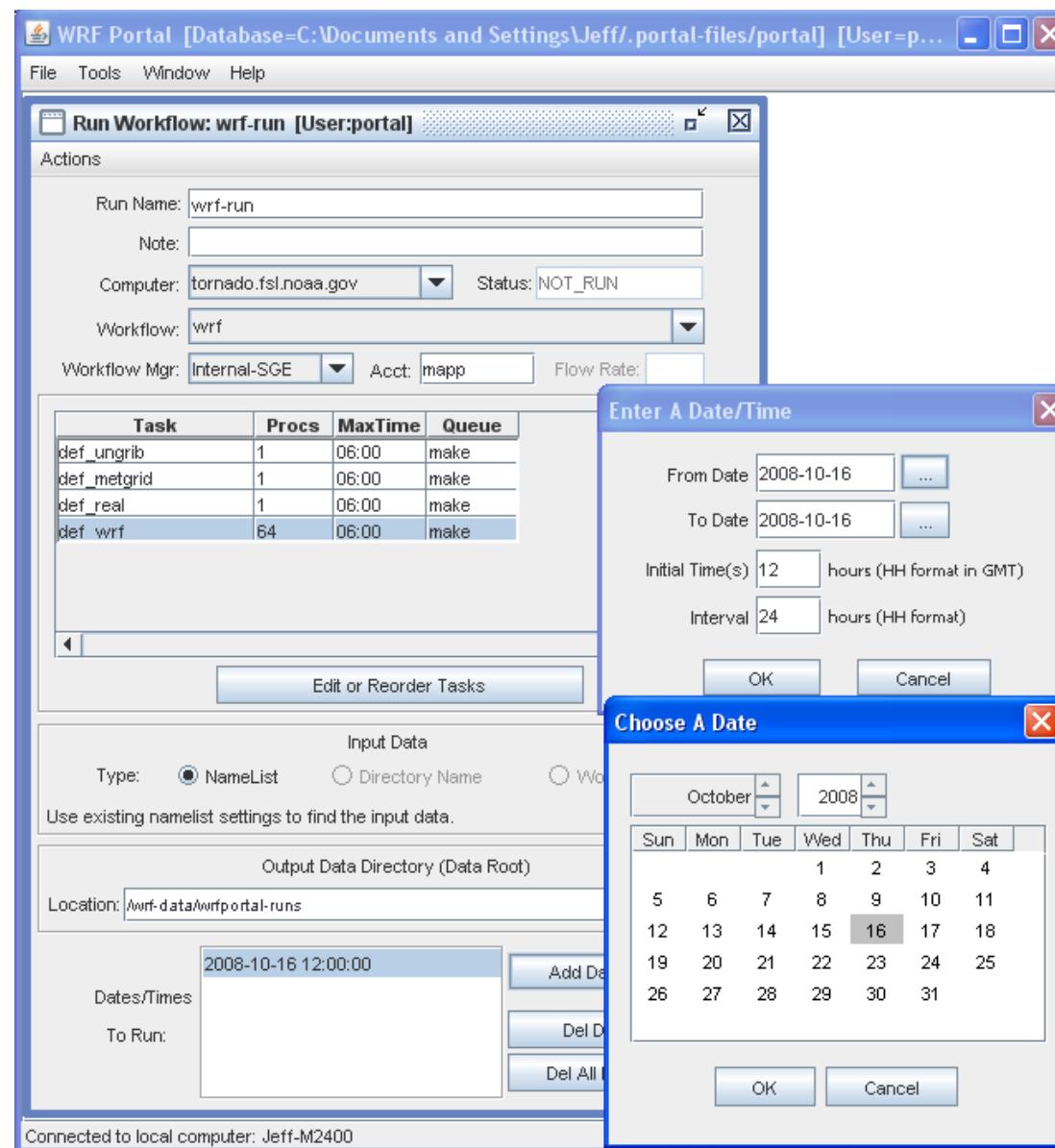
< Back Next >

Connected to local computer: Jeff-M2400

- **Workflow Window** is where you add tasks (scripts) to your workflow, configure any required env vars, etc.



- Run Workflow window is where a user selects the workflow, computer, tasks, number of processors allocated to each task, & dates



Run Monitor enables a user to follow the progress of runs

WRF Portal [Database=C:\Documents and Settings\Jeff/.portal-files/portal] [User=portal]

List of runs

Tasks in run

Log files

The screenshot shows the WRF Portal Run Monitor interface. At the top, there's a search criteria panel with fields for 'Run between' (two date pickers), 'Model Cfg' (dropdown), 'Note' (text input), 'Status' (dropdown), and 'Computer' (dropdown set to 'tornado.fsl.noaa.gov'). A 'Search' button is also present. Below this is a table titled 'Run Config' listing three runs:

Run Config	Run Date	Status	Run Time	Date Started	Elapsed Time	Model
wrf-run1	2005-07-11 00:00:00.0	RUNNING	00:02	2008-10-16 15:25:16.0	00:02	wrf
hello-test-run1	2008-10-09 12:00:00.0	DONE	00:00	2008-10-09 17:36:21.0	00:00	hello-test
wrf-run	2008-10-16 12:00:00.0	ERROR	00:00			wrf

A pink arrow points to the first row of this table with the label 'List of runs'.

Below the table is a section titled 'Details for Run Workflow: 'wrf-run1' on 2005-07-11 00:00:00.0' containing a table of tasks:

Task	Job ID	Job Started	Run Time	Est. Time	Status
def_ungrib	186	2008-10-16 15:25 MDT	00:01		done
def_metgrid	187	2008-10-16 15:26 MDT	00:01		done
def_real	188	2008-10-16 15:26 MDT	00:02		running
def_wrf					

A pink arrow points to the second row of this table with the label 'Tasks in run'.

At the bottom of the main window are buttons for 'Refresh', 'View Files/Logs/nc', 'Delete', 'Halt Run', and 'Close'.

A separate 'File Browser' window is open, showing a list of log files for the 'wrf-run1' run:

File Name	Attr	File Size	File Date	Owner
def_metgrid_200507110000.log	-rw-r--r--	1 KB	2008-10-16 15:26:46	smith
def_real_200507110000.log	-rw-r--r--	7 KB	2008-10-16 15:27:30	smith
def_ungrib_200507110000.log	-rw-r--r--	92 KB	2008-10-16 15:25:36	smith
workflow.log	-rw-r--r--	1 KB	2008-10-16 15:28:17	smith

A pink arrow points to the 'View Files/Logs/nc' button in the main window with the label 'Log files'.

At the bottom of the slide, a footer note states: 'Connected to remote computer: tornado.fsl.noaa.gov'

NetCDF and GRIB Viewer

WRF Portal [Database=C:\Documents and Settings\Jeff/.portal-files/portal] [User=portal]

File Tools Window Help

File Browser

Local Files (Jeff-M2400) tornado.fsl.noaa.gov

/wrf-data/wrfportal-runs/wrf-run1/2005071100/wps-output/

File Name	Attr	File Size	File Date	Owner
namelist.wps	-rw-rw-r--	2 KB	2008-10-16 15:26:29	smith
geo_em.d01.nc	-rw-r--r--	3,146 KB	2008-10-10 16:26:25	smith
geo_em.d02.nc	-rw-r--r--	5,508 KB	2008-10-10 16:26:27	smith
NAM:2005-07-11_00	-rw-rw-r--	20,187 KB	2008-10-16 15:25:32	smith
NAM:2005-07-11_03	-rw-rw-r--	20,187 KB	2008-10-16 15:25:33	smith

View as Text View NetCDF Close

Datasets Browser

File Edit Plot Window Help

Create Plot Target

GREENFRAC in temp

Plot 1: GREENFRAC

0 0.07496 0.15988 0.23947 0.30986 0.37745
Equirectangular (Projected) projection rendered on 1905-05-03 18:35:44
Date Min = 0, Max = 0.37745

Array00 Scale Map Contours Colors Captions
Plot Map of Array 1 Only Interpolate
Array 1: GREENFRAC
Synthesized time coordinate from Times@time: 1 of 1 = 1905-05-03 18:35:44
Month: 5 of 12 = 5 of 12

List: Only Plottable Variables

Connected to remote computer: tornado.fsl.noaa.gov

Diff Tool compares workflows, runs, text files (e.g. namelists)

WRF Portal [Database=C:\Documents and Settings\jssmith/.portal-files/portal] [User=portal]

File Tools Window Help

Diff Tool

Type
 Workflow
 Workflow Run
 Text files from disk

Workflows To Diff

1 portal hep.fsl.noaa.gov wrf-EastCoast

2 portal hep.fsl.noaa.gov wrf-EastCoast2

Diff Clear

namelist.input
FILES ARE IDENTICAL

namelist.wps

```
&share
wrf_core = 'ARW',
max_dom = 1,
start_date = '2006-01-10_00:00:00',
end_date = '2006-01-10_12:00:00',
interval_seconds = 10800,
io_form_geogrid = 2,
opt_output_from_geogrid_path = '/export/jeff/domains/E'
debug_level = 0,
/
&geogrid
parent_id = 1,
parent_grid_ratio = 1,
```

namelist.input
FILES ARE IDENTICAL

namelist.wps

```
&share
wrf_core = 'ARW',
max_dom = 1,
start_date = '2005-07-11_00:00:00',
end_date = '2005-07-11_12:00:00',
interval_seconds = 10800,
io_form_geogrid = 2,
opt_output_from_geogrid_path = '/export/jeff/domains/EastCoast/'
debug_level = 0,
/
&geogrid
parent_id = 1,
parent_grid_ratio = 1,
```

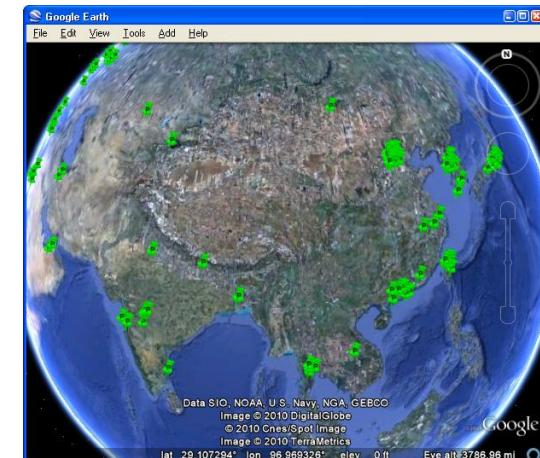
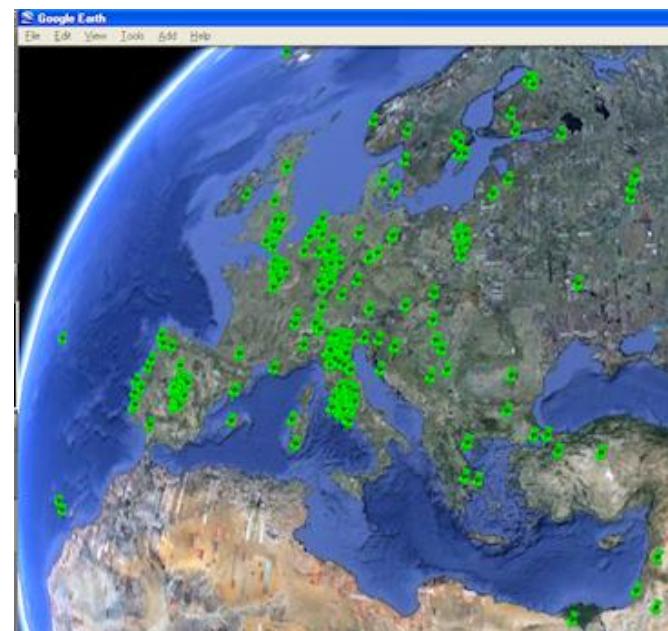
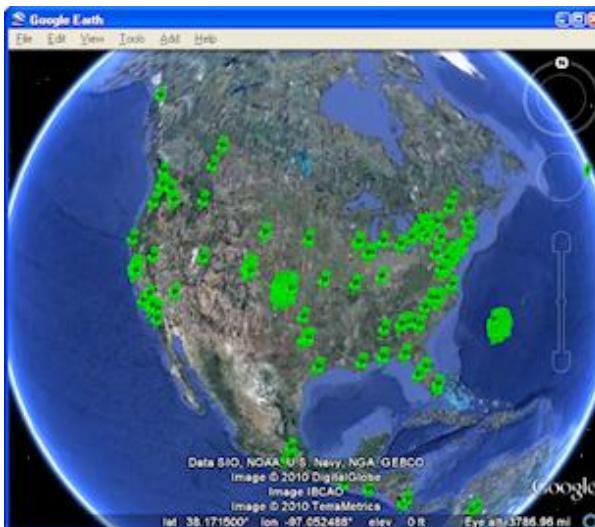
Connected to local computer: Tornado2

Who uses WRF Domain Wizard and WRF Portal?

- Our users come from many different countries and their backgrounds run the gamut of academia, government and private industry
- See <http://wrfportal.org/about.html>

Estimated Worldwide Users of This Software

Software	Est. Users	Countries	Google Earth
WRF Portal	964	66	open in Google Earth
WRF Domain Wizard	1472	69	open in Google Earth
Ext. Workflow Mgr	74	18	open in Google Earth



WRF Portal and WDW Support

- Web form for submitting bug reports or to ask questions:
<http://wrfportal.org/RequestInfoOrBugReport.html>

Link on About Page

Request Information or Submit Bug Report

Your Name: * required

Your Email: * required

Submission: General question

Java version:

OS: (e.g. Windows, Linux, MacOS, etc.)

Workflow Mgr: Internal (default) (only applicable to WRF Portal)

Batch System: None or N/A (only applicable to WRF Portal)

Question or Bug Report:

* required

Important: if this is a bug report, please include the error information from the console window (or Java Webstart window). This information is very helpful in determining the cause of the problem.

Submit Reset

Tutorials on wrfportal.org

WRF Portal - Demos / Tutorials - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://wrfportal.org/flash-tutorial.html

WRF Portal - Demos / Tutorials

Home WRF Portal Domain Wizard FIM Portal Tutorials (HTML) Tutorials (Video) F.A.Q. About

Quick Overview Videos

WRF Portal (133 seconds)
WRF Domain Wizard (105 seconds)

How To Launch Software Tutorial Web Page

How to launch WRF Portal or WRF Domain Wizard from Firefox browser

WRF Portal Tutorials

These Flash tutorials demonstrate how to use WRF Portal.

- 1) Portal Wizard (configures WRF Portal)
- 2) Define a workflow
- 3) Run a workflow, Diagnose and Fix Errors
- 4) Diff tool
- 5) Visualize NetCDF/GRIB output files (maps) in Panoply
- 6) Download Jan 2000 test data, and run real and wrf
Note: if you get the fatal error "not enough info for a p sfc computation", add the following flag to the "domains" section of namelist.input:
sfc_to_sfc = .true.
Note: if you get a seg fault fatal error from wrf.exe, try running "ulimit -s unlimited" from a startup script and then re-running WRF.
- 7) Run WRF Portal "locally" on a remote machine using X forwarding
You might do this if WRF Portal's built-in SSH support doesn't work with the token card security of the computer that WRF is installed on.
- 8) How to determine which run date to use (using File Browser and Julian Day Calc Tool)
- 9) How to create custom tasks (scripts), add them to a workflow, run them, view the log files and output.

WRF Domain Wizard Tutorials

These Flash tutorials demonstrate how to use WRF Domain Wizard.

>>NEW VIDEO>> Domain Wizard 2.00 In A Nutshell (installing, configuring, creating domain, running WPS, visualizing NetCDF output)

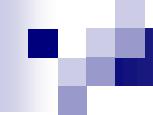
- 1) Configuring WRF Domain Wizard

Done

About The Tutorial Videos

These video tutorials require the Macromedia Flash player in order to run. If the Flash plugin isn't already part of your browser, you can download it from [here](#).

Most of the videos are reasonably small (around 2-3 Mb in size) and run a few minutes long.



Thank you!

You can contact me at wrfportal.org
jeff.s.smith@noaa.gov